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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,581	02/23/2006	Ki-Soo Lee	0808-0350PUS1	7608
2292 7590 03/12/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER LU, C CAIXIA	
			ART UNIT 1713	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		03/12/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/12/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Office Action Summary**

Application No.

10/527,581

Applicant(s)

LEE ET AL.

Examiner

Caixia Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 28-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 28-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Claims 1-25 and 28-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims, the "siloxane groups" is referred as the reactive group on the surface of the support. However, siloxane groups in general is not reactive, and support such as silica has silanol group on its surface which is reactive. It appears that applicants have used the wrong nomenclature, the "siloxane" should be "silanol" in view Scheme 2 of page 8 of the Specification. Appropriate corrections are requested.

In claim 8, (i) the limitation of the cyclopentadienyl as "a metalloid of a group XIV metal" does not make any sense, clarification is requested; and (ii) Chemical Formulas (a)-(c) lack antecedences because they are not a part of the Chemical Formula 1. Do applicants intend to claim that at least one of R<sup>1</sup> and R<sup>2</sup> is represented by Chemical Formula (a), (b), or (c)?

In claim 9, the use of parentheses should be avoided since the limitation within the parentheses is optional.

In claim 11, (i) the limitation of the cyclopentadienyl as "a metalloid of a group XIV metal" does not make any sense, clarification is requested; (ii) symbol "X" is a trivalent structure in Formulas 2 and 3, however, "X" is improperly defined as divalent group such as alkylene, dialkyl silicon or germanium, alkyl phosphine or amine; (iii) symbol "D" is a divalent structure in Formulas 2 and 3, however, "D" is improperly

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defined as trivalent atom such as nitrogen; and (iv) Chemical Formulas (a)-(c) lack antecedences because they are not a part of the Chemical Formula 1. Do applicants intend to claim that at least one of  $R^1$  and  $R^2$  is represented by Chemical Formula (a), (b), (c) or (d) instead?

In claim 12, (i) symbol "X" is a tetravalent structure in Formulas 2 and 3, however, "X" is improperly defined as divalent group such as methylene and ethylene; (ii) symbol "D" is a divalent structure in Formulas 2 and 3, however, "D" is improperly defined as trivalent atom such as nitrogen.

In claim 14, symbol "N" should not be used to defined Group XIII elements such as B and Al, since "N" is conventionally used to represent **nitrogen**. It is well established that the inventor can be his own lexicographer; however, no term may be given a meaning repugnant to the usual meaning of the term (MPEP 608.01 (o)).

The analogous rejections as shown above are also applied to

- (i) the definition of "D" in claim 13;
- (ii) the "a metalloid of a group XIV metal" limitation and the antecedences of Chemical Formulas (a)-(d) of claim 30 and 61 respectively;
- (iii) the "a metalloid of a group XIV metal" limitation, the antecedences of Chemical Formulas (a)-(d) and the definitions of "X" and "D" in claims 33;
- (iv) the definitions of "X" and "D" in claim 34;
- (v) the definition of "D" in claim 35;
- (vi) the use of symbol "N" of claim 36;

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(vii) the "a metalloid of a group XIV metal" limitation, the antecedences of Chemical Formulas (a)-(d) and the definitions of "X" and "D" in claim 64;

(vii) the definition of "X" and "D" and the use of parentheses in claim 65;

(viii) the definition of "D" in claim 66; and

(ix) the use of symbol "N" of claim 67.

***Specification***

2. The disclosure is objected to because of the same informalities in the corresponding texts which support the above cited claims.

Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.  
Primary Examiner